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4. A biocide concentrate composition for use in hard water and in the presence of organic material, consisting of:

- a.) a surfactant agent, for complexing or stabilizing iodine;
- b.) a biocidal amount of iodine complexed by the surfactant agent, or by hydriodic acid, and surfactant;
- c.) propionic acid and equivalents for pH control, and for combining with ambient NH₃, or ammonium compounds arising from fermenting litter and manure to form ammonium propionate, thereby producing residual biocidal activity, and inhibiting microorganism formation, including preventing mold formation; and
- d.) acidifiers to adjust the composition pH to within the acid range.

7. A biocide concentrate composition, consisting of:

- a.) a surfactant agent, for complexing or stabilizing iodine and hydriodic acid;
- b.) a biocidal amount of iodine complexed by the surfactant: at least about 0.1% and, hydriodic acid: at least about 0.01% for reducing surface tension;
- c.) propionic acid, and equivalents for combining with ambient ammonia or ammonia containing compounds arising from fermenting litter and manure to form ammonium propionate: at least about 10%; and,
- d.) acidifiers to adjust the composition pH to within the acid range.

11. The composition of Claim 4, which consists of: iodine: at least about 0.1%; hydriodic acid: at least about 0.01%; propionic acid, and equivalents thereof: at least about 10%; an acid: sufficient to obtain a pH of about -2 to 3; a buffer; at least about 1%; and propylene glycol, and equivalent glycols; at least about 5%, all part by weight.

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12. The composition of Claim 11, consisting of: iodine: about 0.1% - 5%; hydriodic acid: about 0.01% - 2%; propionic acid, and the like: about 10% - 75%; an acid sufficient to obtain a pH of about 2 to 3; a buffer: at least about 1%; and, propylene glycol, and the like: about 5% - 30%, all parts by weight.

21. A method for reducing or eliminating biocides from surfaces for animal husbandry, animal feed and food processing operation in the presence of hard water, consisting of: applying to the surface a solution containing a surfactant-agent; a biocidal amount of hydriodic acid and complexed or stabilized iodine, propionic acid, and equivalent acids for pH control, and for combining with ambient NH_3 or ammonia containing compounds arising from fermenting litter and manure to form ammonium propionate, thereby producing residual biocidal activity, and inhibiting (or preventing) microorganism including mold formation; and, acidifiers to adjust the composition pH to within the acid range.

23. The method of Claim 21, including propylene glycol, and equivalent glycols for inhibiting dust formation.

28. The method of Claim 21, in which the solution consists of: iodine: about at least 0.1%; hydriodic acid: at least about 0.01%; propionic acid, and equivalents thereof: at least about 10%; an acid: sufficient to obtain a pH of about 2 to 3; a buffer: about 0% - 10%; and, propylene glycol, and equivalents thereof: about 0 - 10%, all parts by weight.

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29. The method of Claim 28, in which the solution consists of: iodine: 0% - 5%; hydriodic acid: about 0.01% - 2%; propionic acid, and equivalents thereof: about 10% - 75%; an acid sufficient to obtain a pH of about 2 to 3; a buffer: about 0% - 10%; and, propylene glycol, and equivalents thereof: about 5% - 30%, all parts by weight.

w/ Ambient NH_3 to form NH_3 propionate (San 28)

40. The method of Claim 21, for use as a bovine teat dip.

wherein the soln is applied as

41. The method of Claim 28, for use as a bovine teat dip.